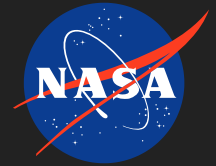


## Integrated Monitoring AWAREness Environment (IM-AWARE), Phase I

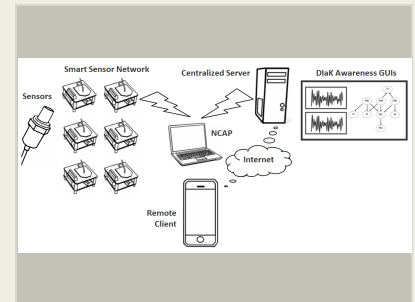
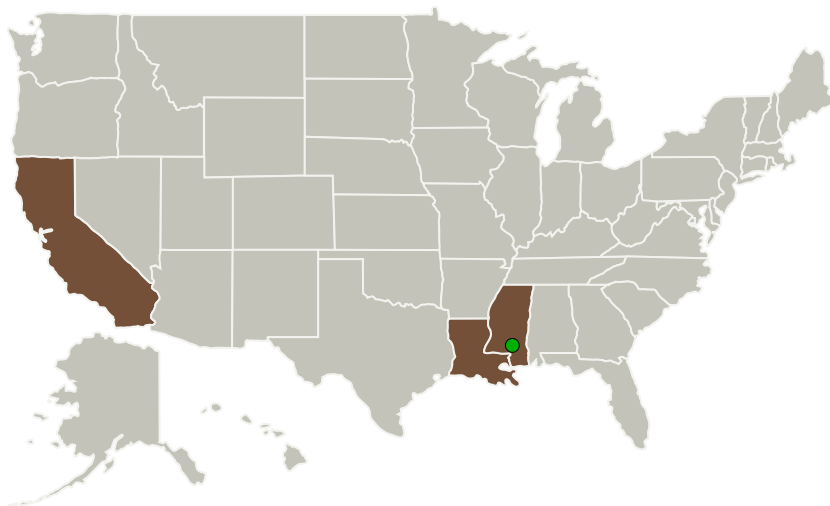


Completed Technology Project (2015 - 2016)

## Project Introduction

For this STTR project, American GNC Corporation (AGNC) and Louisiana Tech University (LaTECH) are proposing a significant breakthrough technology for improving embedded sensing, remote and wireless monitoring, and the capture of data, information, and knowledge (DIaK) at propulsion ground test facilities with the Integrated Monitoring AWAREness Environment (IM-AWARE). This system consists of smart sensors that interface with transducers measuring parameters such as heat flux, temperature, pressure, strain, and near-field acoustics. Low-level fault diagnostic autonomy is granted by advanced algorithms that not only extract features in measured data which are highly correlated with potential failure modes, but also take advantage of the interrelations in a large, complex system. High-level knowledge is infused into the environment with graph-based methods which allow describing cause and effect relationships. These core capabilities are then deployed in an innovative Enterprise networking infrastructure based on wireless and ubiquitous information sharing. Finally, at the front-end of IM-AWARE, graphical user interfaces (GUI) for both PCs and mobile devices deliver a complete picture of the monitored system and associated DIaK with real-time updates.

## Primary U.S. Work Locations and Key Partners



Integrated Monitoring AWAREness Environment (IM-AWARE), Phase I

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Organizations Performing Work	Role	Type	Location
American GNC Corporation	Lead Organization	Industry Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB)	Simi Valley, California
Louisiana Tech University(LA Tech)	Supporting Organization	Academia	Ruston, Louisiana
● Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi

## Primary U.S. Work Locations

California	Louisiana
Mississippi	

## Project Transitions

▶ **June 2015:** Project Start

✓ **June 2016:** Closed out

**Closeout Summary:** Integrated Monitoring AWAREness Environment (IM-AWARE), Phase I Project Image

**Closeout Documentation:**

- Final Summary Chart Image(<https://techport.nasa.gov/file/139005>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

American GNC Corporation

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

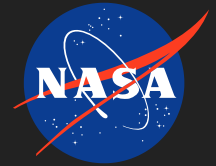
**Principal Investigator:**

Francisco Maldonado

**Co-Investigator:**

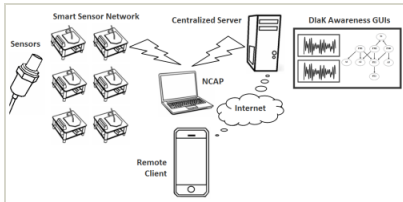
Francisco G Maldonado

# Integrated Monitoring AWAREness Environment (IM-AWARE), Phase I



Completed Technology Project (2015 - 2016)

## Images

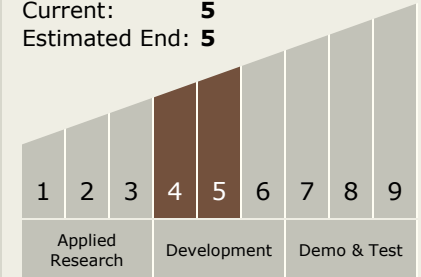


### Briefing Chart Image

Integrated Monitoring AWAREness Environment (IM-AWARE), Phase I  
(<https://techport.nasa.gov/image/129819>)

## Technology Maturity (TRL)

Start: **4**  
Current: **5**  
Estimated End: **5**



## Technology Areas

### Primary:

- TX13 Ground, Test, and Surface Systems
  - TX13.4 Mission Success Technologies
    - TX13.4.5 Operations, Health and Maintenance for Ground and Surface Systems

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System